

Components of an Ontario Residential Electricity Bill

environmental defence

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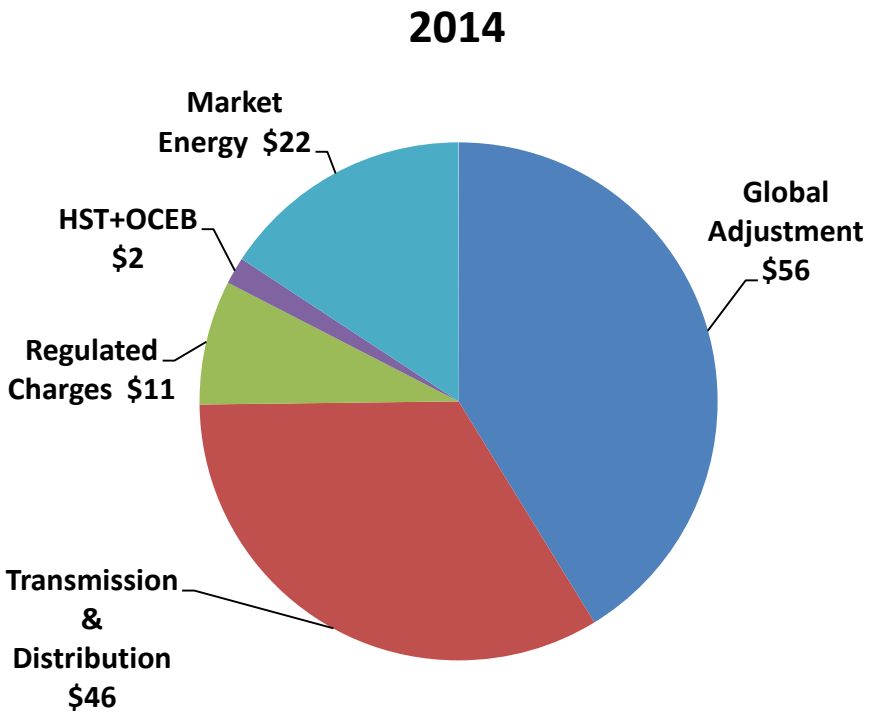
Introduction

- Power Advisory LLC was retained by Environmental Defence to analyze the costs contributing to residential electricity bills in Ontario, and how these are expected to change over time.
- Our analysis is based on Ontario's 2013 Long-Term Energy Plan (LTEP), supplemented by Power Advisory's forecasts and calculations.
  - ✓ We have used the forecasts from the LTEP wherever possible. Our own forecasts (e.g., prices) are different in some respects but not so much as to materially affect the results.
- The results shown are based on the monthly bill for a typical residential customer using 800 kWh/month on time-of-use rates (TOU) and presented in constant 2014 dollars; bills are divided into five main components:
  - ✓ Market Energy (Hourly Ontario Electricity Price (HOEP) plus distribution losses)
  - ✓ Global Adjustment (which can be subdivided into source of supply)
  - ✓ Transmission and Distribution (combined into a single component)
  - ✓ Regulated Charges (Wholesale Market Service Cost and Debt Retirement Charge)
  - ✓ Harmonized Sales Tax (HST) and the Ontario Clean Energy Benefit

The Global Adjustment is the largest bill component

- The Global Adjustment (GA) pays for the difference between Ontario's contractual commitments to suppliers (including conservation and demand management (CDM) programs), and the value on the short-term wholesale market of the electricity generated under these contracts.
- Currently, the Ontario Clean Energy Benefit (OCEB) (a 10% credit) approximately offsets the HST (at 13%), but the OCEB is due to expire at the end of 2015.



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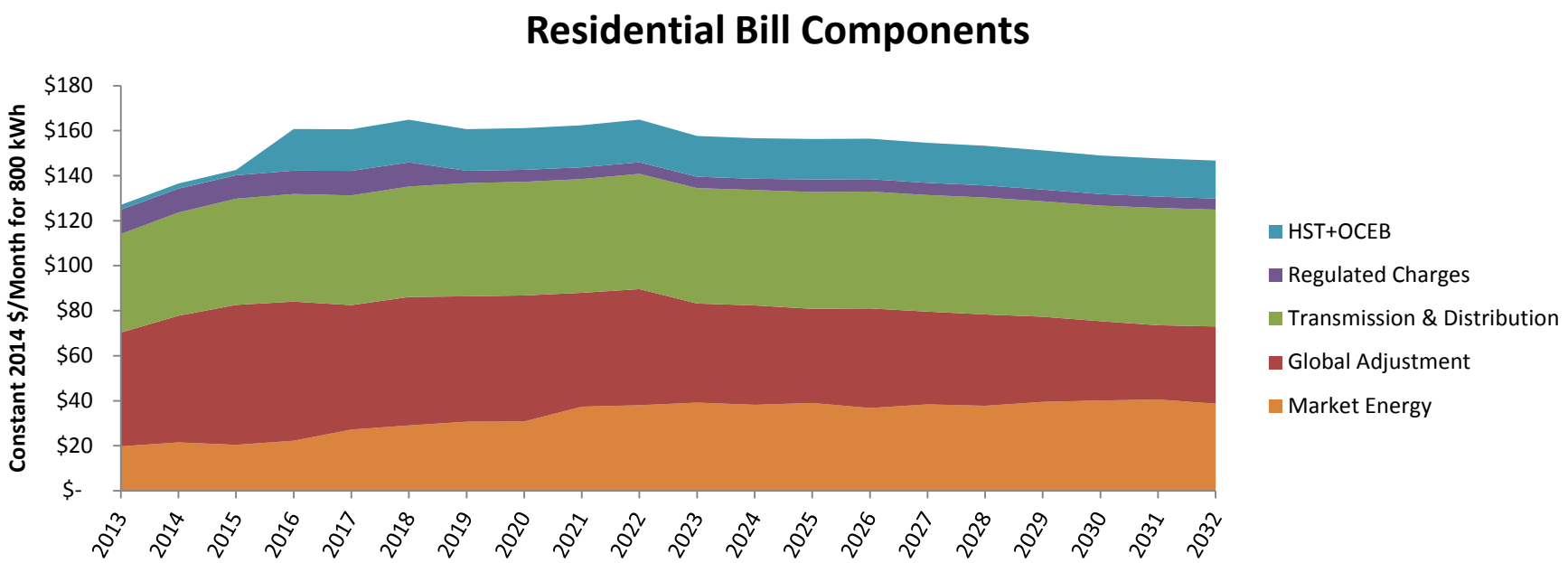
Residential bills are forecast to rise in the next few years and to decline after 2022 in real terms



- The increases are largely due to the expiry of the OCEB at the end of 2015 and increases in Market Energy costs.
  - ✓ All else being equal, an increase in Market Energy costs would largely be offset by a decrease in GA costs (because GA covers difference between contract costs and market values), however contract costs are increasing so no offsetting decrease is seen.
- After 2022, GA costs (in 2014 $) are forecast to decline, because contract costs will stabilize while market energy costs increase.

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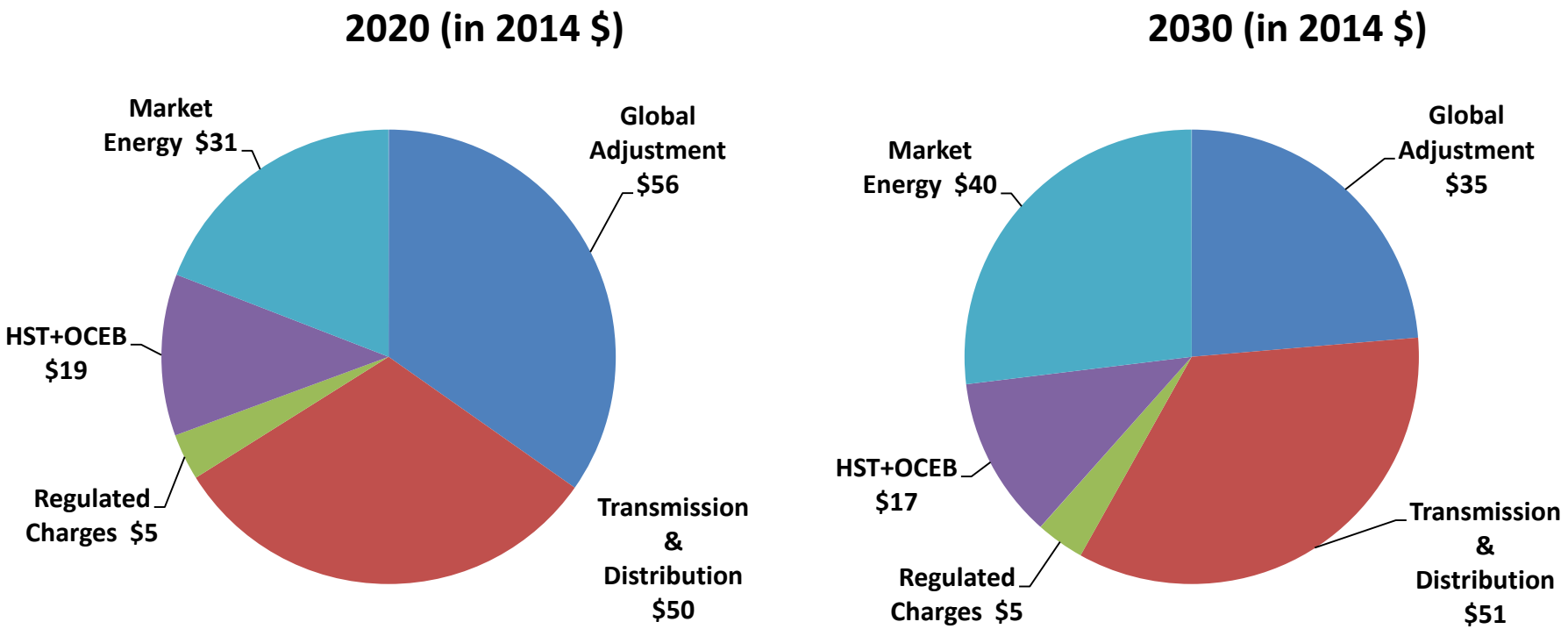
By 2030,Transmission and Distribution costs are forecast to be the largest component of the electricity bill



- GA costs are forecast to decrease from $56/month in 2014 to $35/month in 2030 due to a combination of decreases in underlying contract costs and increases in the value of market energy.

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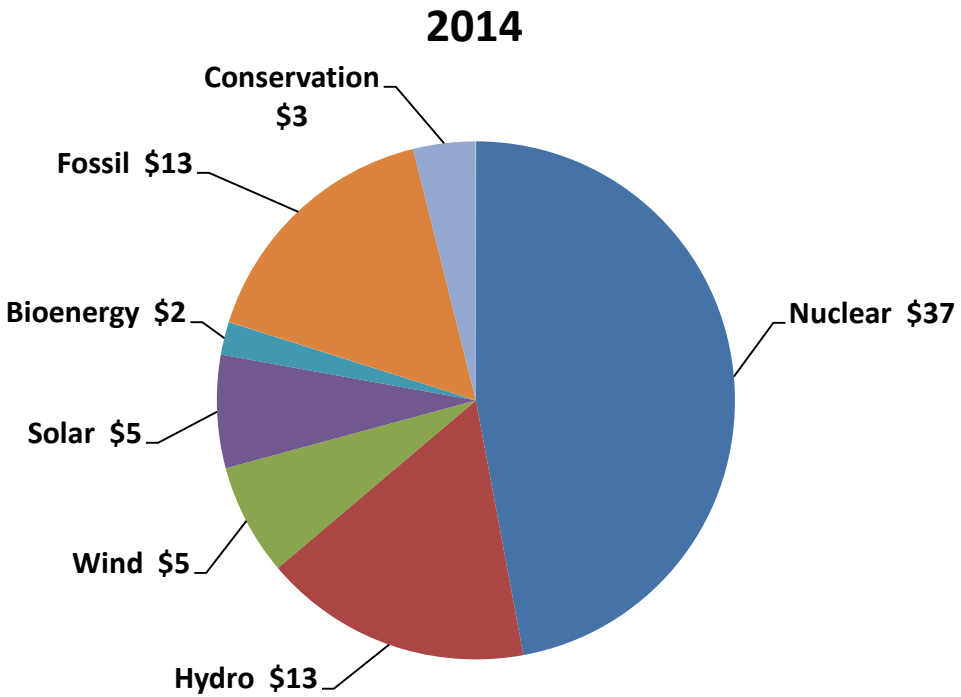
To see the bill contribution of each source of supply, the Market Energy and Global Adjustment components were combined

- Most sources of supply are paid through a combination of market prices and the Global Adjustment. The split between the two can vary with market conditions, but the sum of the two is set by contract, and therefore is fairly constant, for most supply sources.
- Nuclear currently accounts for almost half of wholesale supply costs, followed in size by fossil and hydro costs.
- Non-hydro renewables (i.e., wind, solar and bio) together account for $13/month on a typical bill, which is 16% of wholesale supply costs and 9% of the total bill.



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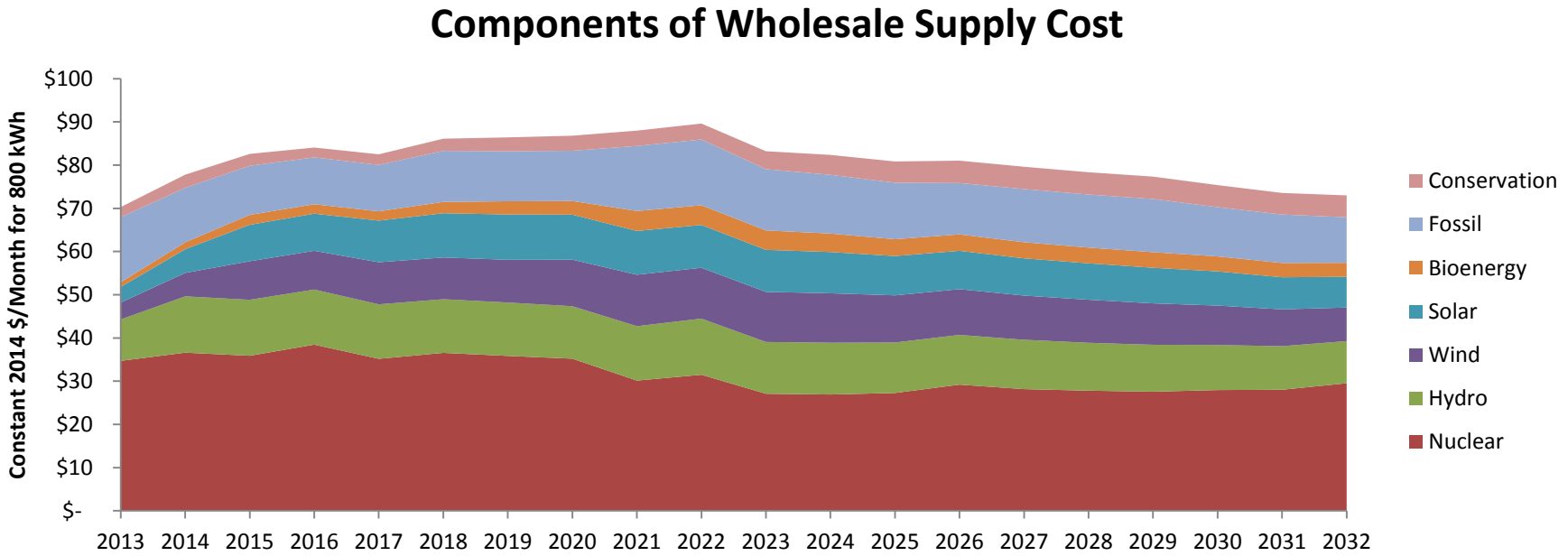
Nuclear wholesale supply costs are forecast to decrease in real terms, while non-hydro renewable costs increase



- Nuclear costs are forecast to decrease as generating units at Pickering retire and the other units at Bruce and Darlington are taken out of service for refurbishment, although unit costs will increase post-refurbishment.
- Hydro and fossil costs are also forecast to decrease slightly, while wind, solar, bioenergy and conservation costs increase.
- Overall, wholesale supply costs are forecast to increase through 2022, and then to decrease in real terms to below current levels.

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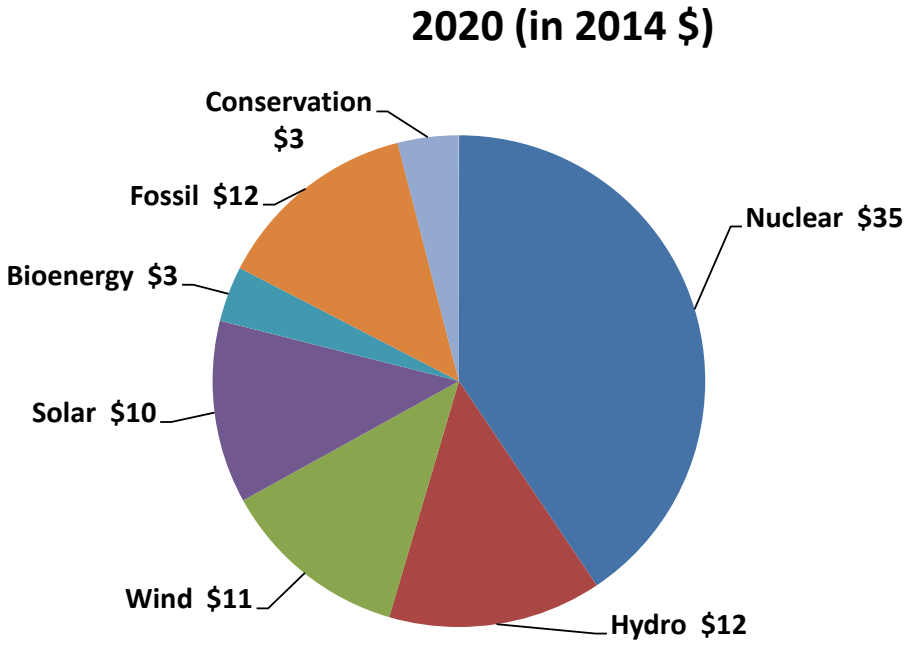
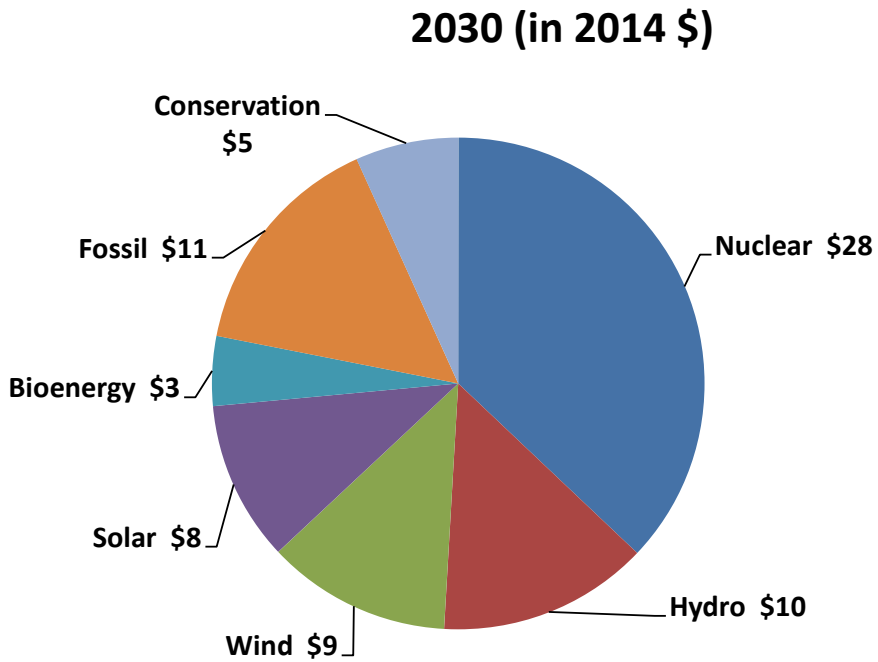
Non-hydro renewable costs are forecast to increase to $24/month by 2020 on a typical residential bill





- Nuclear is expected to continue to be the single largest contributor to wholesale supply costs, followed by fossil and hydro, but non-hydro renewable costs will increase.
- Within non-hydro renewables, wind is the largest component (12% of the GA and 7% of the total bill in 2020), followed closely by solar.

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